

Ship by June 29

Work Order ID 71190

Thursday, June 23, 2011 11:19:13 AM



Item ID: D3269-2

Accept



Setup Start



Revision ID:

Stop



Item Name: Bubble Window, RH

Start Date: 6/23/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 6/29/2011 Req'd Qty: 4.00



Customer:

Reference:

Approvals:

Process Plan:

u

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3269

Rev E

100

0.00



HAND FINISHING THERMOFORMING

Thermoform

Memo

0.00

Thermoforming Machine

Set up Clamping Frame and Load Program as per Folio FTA 014

x4

Wk
11/06/27

110

0.00



HAND FINISHING THERMOFORMING

Thermoform

Memo

0.00

Thermoforming Machine

Cut Blanks to 30" by 48"

x4

Wk
11/06/27

120

0.00



THERMOFORMING MACHINE

Thermoform

Memo

0.00

Thermoforming Machine

Thermoform as per Dwg. D3269 and Folio FTA 014 Dwg. Rev.

E Folio Rev. C

x4

Wk
11/06/27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 71190

Thursday, June 23, 2011 11:19:13 AM



Page 2

Item ID: D3269-2

Accept



Setup Start



Revision ID:

Stop



Item Name: Bubble Window, RH

Start Date: 6/23/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 6/29/2011 Req'd Qty: 4.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

1) Check Surface finish for undesired marks, voids, dimples etc. 2) Check depth of bubble to ensure conformity to drawing tolerances.

x4

JH
11/06/27

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

(x4)

JB
11/06/27

150

HAND FINISHING THERMOFORMING

0.00



Thermoform

Memo

0.00

Thermoforming Machine

1) Trim off excess flange material(12) Buff out any light scratches or blemishes(13) Etch part number and batch number

(x4)

JH
11/06/28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 71190

Thursday, June 23, 2011 11:19:13 AM



Page 3

Item ID: D3269-2

Accept



Setup Start



Revision ID:

Item Name: Bubble Window, RH

Stop



Start Date: 6/23/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 6/29/2011 Req'd Qty: 4.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

8/10/06/29

(x4)

Quality Control

1) Visually inspect for clarity, and proper formation.

170

Identify as per dwg & Stock Location: /

0.00



Packaging

Packaging

Memo

0.00

CL 11/06/29 (4)

Packaging

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

11/6/29 JF

Quality Control

mf
11-06-29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, June 23, 2011 11:19:10 AM

Page 1

Work Order ID: 71190



Parent Item: D3269-2



Parent Item Name: Bubble Window, RH

Start Date: 6/23/2011

Required Date: 6/29/2011

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP A 05.03.22 New issue KJ/JLM
 IPP B 05.05.09 Added engraving EC
 IPP Rev:06-07-03 As per Rev C JLM
 IPP C 07.11.06 Thermoform in-house DL verified by:EC
 IPP Rev: D 08.07.24 As per New Tool DL.

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

MACRYLICS.177		Purchased	No				sf	115.9700		45.832			
---------------	--	-----------	----	--	--	--	----	----------	--	--------	--	--	--



0.177" PLEXIGLAS G CLEAR CAST ACRYLIC SHEET

Location

Loc Qty

Loc Code

therm

115.97

116564

12.85

116796

103.12

17.85 sq ft.
 34.374 sq ft

DL
 11/06/27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 71190
Description: Bubble Window, RH (R44)		Part Number: D3269-2
Inspection Dwg: D3269	Rev: E	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Depth of bubble within tolerances	✓			
Shape Definition	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by: DA

Date: 11/06/27

TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
10.0	+/-0.25	10.125"	✓		TAPE DLOI	
6.2	0.036 Min	0.053"	✓		ULTRA	
3.8	0.057 Min	0.091"	✓		ULTRA	

Measured by: Whelan

Date: 11/06/28

Audited by: S

Date: 11/06/28

Prototype Approval:

Date:

Rev	Date	Change	Revised by	Approved
A	08.11.27	New Issue	KJ/DL	
B	09.10.16	Tolerances revised per Dwg Rev E	KJ	

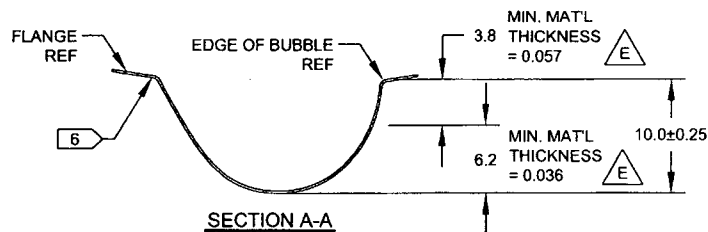
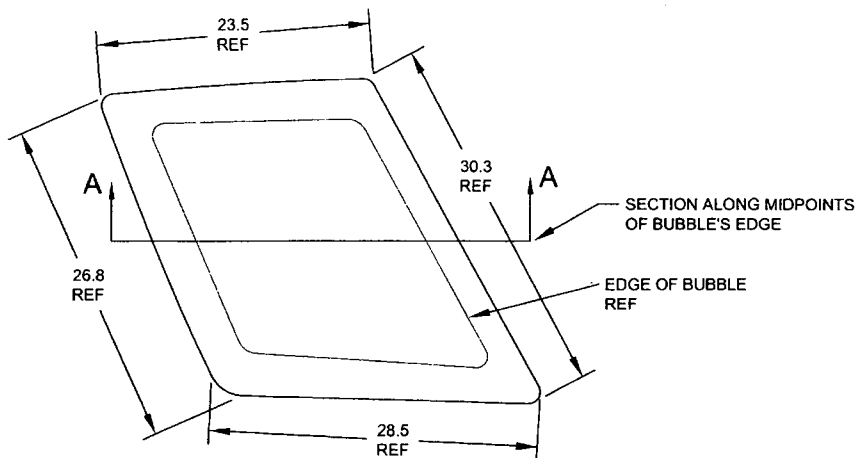
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D3269-1 BUBBLE WINDOW, LH

RELEASED
2009-09-23

NOTES:

- 1) MATERIAL: PLEXIGLAS G CLEAR CAST ACRYLIC SHEET PER LP-391 TYPE 1 GRADE C
OR POLYCAST II CLEAR ACRYLIC SHEET PER MIL-P-5425
0.177 TO 0.188 THICK (STOCK, REF DART SPEC M-ACRYLIC-S)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.010 TO 0.020 MAX
 - 6) IDENTIFICATION: ENGRAVE P/N & B/N ON FLANGE WITHIN 0.25" OF BUBBLE. USE 0.125" LETTERS TO MAX DEPTH OF 0.005".
 - 7) WEIGHT: 4.88 lbs
 - 8) FORM PER D3269-1T1 AND QSI 022
- FORMING PROCESS:
- (a) DRAPE OVER D3269-1T1 MOLD
 - (b) HEAT TO 290°F
 - (c) VACUUM FORM TO SPECIFIED HEIGHT
 - (d) LET COOL TO AT LEAST 100°F BEFORE HANDLING
 - (e) TRIM FLANGE TO PROFILE OF MOLD

E	0.057 WAS 0.095 (ZN C6-1, C7-2); 0.036 WAS 0.050 (ZN B6-1, B7-2) PER PAR 09-029	RF	09.08.21
D	REFORMAT, CHG OVERALL REF DIMS, CHG FORMING PROC (A8-1, A8-2), MIN WALL WAS 0.100 NOW 0.095 (C6-1, C7-2)	CP	08.02.13
C	NO LONGER TRIMMED	CP	06.06.22
B	UPDATE MATERIAL SPEC.	CP	05.03.10
A	NEW ISSUE	CP	05.02.18
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. E
CHECKED	UP	D3269	SHEET 1 OF 2
MFG. APPR.	AP	TITLE	SCALE
APPROVED	AP	BUBBLE WINDOW	NTS
DE APPR.	AP	DATE	09.08.21
COPYRIGHT © 2005 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

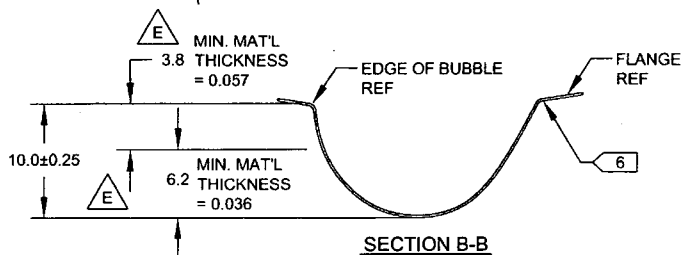
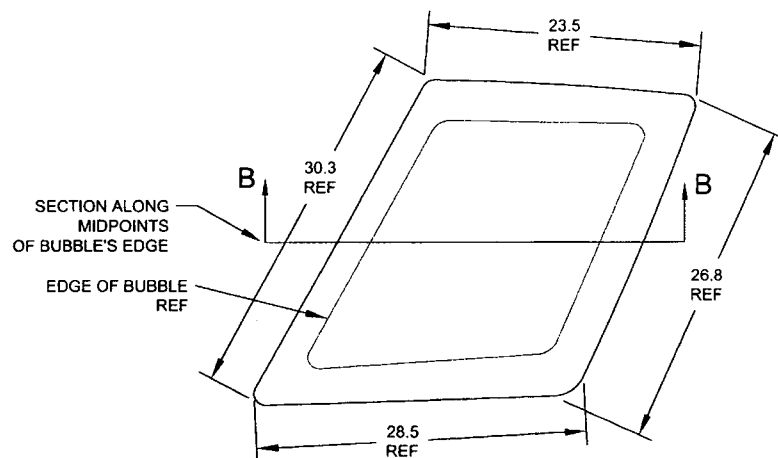
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1



SECTION B-B

D3269-2 BUBBLE WINDOW, RH

NOTES

- 1) MATERIAL: PLEXIGLAS G CLEAR CAST ACRYLIC SHEET PER LP-391 TYPE 1 GRADE C
OR POLYCAST II CLEAR ACRYLIC SHEET PER MIL-P-5425
0.177 TO 0.188 THICK (STOCK, REF DART SPEC M-ACRYLIC-S)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.010 TO 0.020 MAX
- 6) IDENTIFICATION: ENGRAVE P/N & B/N ON FLANGE WITHIN 0.25" OF BUBBLE. USE 0.125" LETTERS TO MAX DEPTH OF 0.005".
- 7) WEIGHT: 4.88 lbs
- 8) FORM PER D3269-2T1 AND QSI 022
FORMING PROCESS: (a) DRAPE OVER D3269-2T1 MOLD
(b) HEAT TO 290°F
(c) VACUUM FORM TO SPECIFIED HEIGHT
(d) LET COOL TO AT LEAST 100°F BEFORE HANDLING
(e) TRIM FLANGE TO PROFILE OF MOLD

RELEASED
2009-09-23

DESIGN	42	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	UP	DRAWING NO.	REV. E
MFG. APPR.	5-6	D3269	SHEET 2 OF 2
APPROVED	AW	TITLE	SCALE
DE APPR.	AW	BUBBLE WINDOW	NTS
DATE	09.08.21	COPYRIGHT © 2005 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries